4. Alignment and Adjustments

4-1 General Alignment Instructions

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync and focus.

2. Observe the picture for good black and white details. There should be objectionable color shading; if color shading is present, demagnetize, perform purity and convergence adjustments described below.

3. Use the specified test equipment or its equivalent.

4. Correct impedance matching is essential.

5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.

6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.

7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.

8. To protect against shock hazard, use an isolation transformer.

4-2 High voltage Check

CAUTION : There is no high voltage adjustment on this chassis. The B+ power supply should be +135 volts (with full color- bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.

2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).

3. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 32 KV under any conditions.

4-3 FACTORY MODE CONTROL

1. Enter & Concel the Factory Mode
   (1) Usual Remote Control
   Enter : PICTURE OFF -> DISPLAY KEY -> MENU KEY -> MUTE KEY -> POWER ON (Press each remote control key with in 3 seconds).
   Cancel : POWER OFF -> ON

   (2) Factory Remote Mode
   Enter : DISPLAY KEY -> FACTORY KEY (Press each remote control key with in 3 seconds).
   Cancel : POWER OFF -> ON
   Press the FACTORY key twice at intervals of at lease 1 second.
   (Enter the AGING Mode once)

   (3) Set Value When Entering the Factory Mode
   - Picture Mode & Sound Mode are set to the standard data.

   (4) Adjustments
   - CH.UP/DOWN Key : Use to select the item you want.
   - VOLUME UP/DOWN Key : Increases or decreases the value of data.
   - MENU Key : Use to save the current set value in EEPROM and exit to the upper mode.
   - Use the TV/VIDEO Key the conver to the AV Mode.

4-4 FACTORY MODE MENU

4-4-1 CW MODEL

Service Mode
Video Adjustment
Y.C-Delay
Deflection normal
Deflection VGA
Option byte
Reset

VIDEO ADJUSTMENT

FUNCTION	INITIAL DATA	RANGE	REMARK
R Drive	31	0 ~ 63	
B Drive	31	0 ~ 63	
G Drive	31	0 ~ 63	
Gamma	12	0 ~15	
R Cutoff	31	0 ~ 63	
B Cutoff	31	0 ~ 63	
G Cutoff	31	0 ~ 63	
Sub Cont	7	0 ~15	
Sub Brt.	31	0 ~ 63	
Sub Color	7	0 ~15	
Sub Tint	7	0 ~15	
V Peaking	7	0 ~12	
TTX Cont	10	0 ~15	
TTX Bright	10	0 ~ 63	
PIP Cont	0	0 ~15	
PIP Bright	0	0 ~15	
CG R Contrast	40	0 ~ 63	
CG G Contrast	40	0 ~ 63	
CG B Contrast	40	0 ~ 63	

Y.C-DELAY

FUNCTION	INITIAL DATA	RANGE	REMARK
PAL-B/G	6	0 ~15	
PAL-D/K/L	8	0 ~15	
PAL-I	8	0 ~15	
SECAM-B/G	4	0 ~15	
SECAM-D/K/L	6	0 ~15	
NTSC	7	0 ~15	
PAL-AV	5	0 ~15	
SECAM-AV	4	0 ~15	
NTSC-AV	6	0 ~15	
DVD	9	0 ~15	

DEFLECTION NORMAL

FUNCTION	INITIAL DATA	RANGE	REMARK
P.V-SIZE	-40	-128 ~ +127	
P.V-SFT	-39	-128 ~ +127	
P.V-LIN	0	-128 ~ +127	
P.S-CORR	0	-128 ~ +127	
P.EW-WTH	+28	-128 ~ +127	
P.EW-PBL	-27	-128 ~ +127	
P.H-SFT	-22	-64 ~ +63	
P.EW-TPZ	0	-128 ~ +127	
P.BOW	0	-128 ~ +127	
P.ANGLE	0	-128 ~ +127	
P.EW-UPCR	0	-128 ~ +127	
P.EW-LOCR	0	-128 ~ +127	
P.HOR-EHT	0	0 ~ +255	
P.VER-EHT	0	0 ~ +255	
P.INT. VOL. REF	0	-16 ~ +15	
P.HSYNC DELAY	+10	-128 ~ +127	

DEFLECTION NORMAL

FUNCTION	INITIAL DATA	RANGE	REMARK
P.PHP	32	0 ~ 255	
P.PVP	32	0 ~ 255	
P.PHS	0	0 ~15	
P.PVS	0	0 ~15	
P.CG V-AMP OFFSET	+30	-128 ~ +127	

PICT. IMPROVE

FUNCTION	INITIAL DATA	RANGE	REMARK
LIMIT LEVEL	0	0 ~ 3	
SYSEM	1	0 ~ 3	
CLP-MSK	0	0 ~ 3	
ABL-MODE	1	0 ~ 3	
ABL-TH	1	0 ~ 3	
DTV-SYNC	69	0 ~ 255	
CR-OFFSET1	10	0 ~ 15	
CB-OFFSET1	10	0 ~ 15	
CR-OFFSET2	7	0 ~ 15	
CB-OFFSET2	7	0 ~ 15	
CTI-LEVEL	1	0 ~ 3	
R-Y/R	3	0 ~ 15	
R-Y/B	7	0 ~ 15	
G-Y/R	15	0 ~ 15	
G-Y/B	2	0 ~ 15	
LRGB2-LEVEL	7	0 ~ 15	
PABL-LEVEL	15	0 ~ 15	
BLK-BOTTOM	15	0 ~ 15	
SUB-SHP	3	0 ~ 3	
SUB-FO	2	0 ~ 3	

PICT. IMPROVE

FUNCTION	INITIAL DATA	RANGE	REMARK
PRE-OVER	3	0 ~ 3	
LT1-LEVEL	2	0 ~ 3	
VM-LEVEL	2	0 ~ 3	
VM-DELAY	3	0 ~ 3	
DC-TRAN	3	0 ~ 3	
D-PIC	3	0 ~ 3	
DCTI	8	0 ~ 255	
BPF-LPF	72	0 ~ 255	
HPE-CORING	8	0 ~ 255	

PICT. IMPROVE

FUNCTION	INITIAL DATA	RANGE	REMARK
SYSTEM	2	0 ~ 3	
CR-OFFSET1	7	0 ~ 15	
CB-OFFSET1	9	0 ~ 15	
R-Y/R	2	0 ~ 15	
R-Y/B	15	0 ~ 15	
G-Y/R	7	0 ~ 15	
G-Y/B	0	0 ~ 15	
SUB-SHP	0	0 ~ 3	
SUB-FO	0	0 ~ 3	
PRE-OVER	0	0 ~ 3	
LT1-LEVEL	0	0 ~ 3	
VM-LEVEL	0	0 ~ 3	
VM-DELAY	0	0 ~ 3	
DC-TRAN	3	0 ~ 3	
D-PIC	3	0 ~ 3	

PICT. IMPRV. SECA

FUNCTION	INITIAL DATA	RANGE	REMARK
CR-OFFSET1	6	0 ~ 15	
CB-OFFSET1	11	0 ~ 15	
R-Y/R	2	0 ~ 15	
R-Y/B	15	0 ~ 15	
G-Y/R	7	0 ~ 15	
G-Y/B	0	0 ~ 15	

PICT. IMPRV. DVD

FUNCTION	INITIAL DATA	RANGE	REMARK
CR-OFFSET1	7	0 ~ 15	
CB-OFFSET1	9	0 ~ 15	
CT1-LEVEL	1	0 ~ 3	
DCTI	0	0 ~ 255	
BPF-LPF	72	0 ~ 255	
HPE-CORING	8	0 ~ 255	

PICT. IMPRV. 480p

FUNCTION	INITIAL DATA	RANGE	REMARK
SYSTEM	0	0 ~ 3	
CLP-MASK	0	0 ~ 3	
DTV-SYNC	0	0 ~ 255	
CR-OFFSET1	0	0 ~ 15	
CB-OFFSET1	0	0 ~ 15	
CTI-LEVEL	0	0 ~ 3	
R-Y/R	0	0 ~ 15	
R-Y/B	0	0 ~ 15	
G-Y/R	0	0 ~ 15	

PICT. IMPRV. 480P

FUNCTION	INITIAL DATA	RANGE	REMARK
G-Y/B	0	0 ~ 15	
SUB-SHP	0	0 ~ 3	
SUB-FO	0	0 ~ 3	
PRE-OVER	0	0 ~ 3	
LTI-LEVEL	0	0 ~ 3	
VM-LEVEL	0	0 ~ 3	
VM-DELAY	0	0 ~ 3	
DC-TRAN	0	0 ~ 3	
D-PIC	0	0 ~ 3	

PICT. IMPRV. 1080

FUNCTION	INITIAL DATA	RANGE	REMARK
SYSTEM	0	0 ~ 3	
CLP-MSK	0	0 ~ 3	
DTV-SYNC	0	0 ~ 255	
CR-OFFSET1	0	0 ~ 15	
CB-OFFSET1	0	0 ~ 15	
CTI-LEVEL	0	0 ~ 3	
R-Y/R	0	0 ~ 15	
R-Y/B	0	0 ~ 15	
G-Y/R	0	0 ~ 15	
G-Y/B	0	0 ~ 15	
SUB-SHP	0	0 ~ 15	
SIB-FO	0	0 ~ 3	
PRE-OVER	0	0 ~ 3	
LTI-LEVEL	0	0 ~ 3	
VM-LEVEL	0	0 ~ 3	
VM-DELAY	0	0 ~ 3	
DC-TRAN	0	0 ~ 3	
D-PIC	0	0 ~ 3	

SIM-826HEW OPTION-BYTE

OPTION BYTE	SP47W3HF	SP55W3HF	SP65W3HF	REMARK
CRT	WIDE	WIDE	WIDE	WIDE <--> 4:3
LANGUAGE GROUP	EUROPE	EUROPE	EUROPE	EUROPE <--> ASIA
LANGUAGE	ENGLISH	ENGLISH	ENGLISH	EIGHTEEN LANGUAGES
ATM	ON	ON	ON	ON <--> OFF
SCRT/RCA	SCART	SCART	SCART	SCART <--> RCA
VGA	OFF	OFF	OFF	ON <--> OFF
PLUG&PLAY	ON	ON	ON	ON <--> OFF
DOLBY PROLOGIC	ON	ON	ON	ON <--> OFF
PIP	ON	ON	ON	ON <--> OFF
CW/CS	CW	CW	CW	CW <--> CS
LNA	ON	ON	ON	ON <--> OFF
CHILD-LOCK	ON	ON	ON	ON <--> OFF
HP JACK IDENT	OFF	OFF	OFF	ON <--> OFF
TOP TTX	OFF	OFF	OFF	ON <--> OFF
HIGH DEVIATION	ON	ON	ON	ON <--> OFF
TTX GROUP	W-EUROPE	W-EUROPE	W-EUROPE	E-EUROPE -> RUSSIAN -> ARABIC -> ICELANDIC -> HEBREW
GARRIER MUTE	ON	ON	ON	ON <--> OFF
STANDARD	STANDARD	STANDARD	STANDARD	STANDARD -> SPORT -> MILD -> NATURAL -> CUSTOM -> NDEN

4-4-2 CS MODEL

Service Mode
Deflection
Video Adjust1
Video Adjust2
NTSC OFFSET & CG
DW PIP & OTHERS
OPTION
RESET

DEFLECTION

FUNCTION	INITIAL DATA	RANGE	REMARK
V Shift	124	0 ~ 255	
V AMP	134	0 ~ 255	
V Lin	11	0 ~ 255	
V SC	104	0 ~ 255	
V EHT	0	0 ~ 255	
H AMP	161	0 ~ 255	
Pin Phase	143	0 ~ 255	
Pin AMP	70	0 ~ 255	
Up Corner	128	0 ~ 255	
Low Corner	128	0 ~ 255	
H EHT	0	0 ~ 255	
H Shift	80	0 ~ 127	
V Angle	124	0 ~ 255	
V BOW	128	0 ~ 255	
H Sync Phase	128	0 ~ 255	

VIDEO ADJUST1

FUNCTION	INITIAL DATA	RANGE	REMARK
Red Cutoff	31	0 ~ 63	
Green Cutoff	31	0 ~ 63	
Blue Cutoff	31	0 ~ 63	
Red Drive	31	0 ~ 63	
Green Drive	31	0 ~ 63	
Blue Drive	31	0 ~ 63	
Sub Bright	31	0 ~ 63	
Sub Contrast	7	0 ~ 15	
Sub Color	15	0 ~ 15	
Sut Tint	7	0 ~ 15	
RYR	3	0 ~ 15	
RYB	7	0 ~ 15	
GYR	15	0 ~ 15	
GYB	2	0 ~ 15	
Gamma	12	0 ~ 15	
P.YC Delay	7	0 ~ 8	

VIDEO ADJUST2

FUNCTION	INITIAL DATA	RANGE	REMARK
SUB Sharp	3	0 ~ 3	
Sharp FO	2	0 ~ 3	
Prev Over	3	0 ~ 3	
LT1	2	0 ~ 3	
CT1	1	0 ~ 3	
VM-Level	2	0 ~ 3	
VM-Delay	3	0 ~ 3	
DC-TRAN	3	0 ~ 3	
D Picture	3	0 ~ 3	
H Width	1	0 ~ 3	

VIDEO ADJUST2

FUNCTION	INITIAL DATA	RANGE	REMARK
H Time Mask	1	0 ~ 3	
ABL Mode	1	0 ~ 3	
ABL TH	1	0 ~ 3	
TTX Position	5	0 ~ 40	
TTX Contrast	200	0 ~ 255	
VSU	3	0 ~ 15	
RGB Bright	0	0 ~ 127	
RGB Contrast	24	0 ~ 63	
Melody Volume	10	0 ~ 20	

NTSC OFFSET & CG

FUNCTION	INITIAL DATA	RANGE	REMARK
Offset V Shift	2	-64 ~ 63	
Offset V AMP	0	-64 ~ 63	
Offset H AMP	6	-64 ~ 63	
Offset H Shift	4	-64 ~ 63	
Cg R Contrast	100	0 ~ 100	
Cg G Contrast	60	0 ~ 100	
Cg B Contrast	10	0 ~ 100	
Cg VAO PAL	24	0 ~ 100	
Cg VAO NTSC	24	0 ~ 100	

DW PIP & OTHERS

ITEM	FUNCTION	INITIAL DATA	RANGE	REMARK
PIP VSTR	VPC3230 0 X 0087	7	0 ~ 15	0 ~ 15
PIP HSTR	VPC3230 0 X 008A	7	0 ~ 15	0 ~ 15
PIP Contrast	VPC3230 fp 0 X 0053	48	0 ~ 63	0 ~ 63
DW 43 BCKPOS	SDA9280 0 X 09	148	0 ~ 255	0 ~ 255
DW 43 BCKWID	SDA9280 0 X 0A	61	0 ~ 255	0 ~ 255
Cr offset1	CXA2101 0 X 0F D7:D4	10	0 ~ 15	0 ~ 15
Cb offset1	CXA2101 0 X 0F D3:D0	10	0 ~ 15	0 ~ 15
Cr offset2	CXA2101 0 X 10 D7:D4	7	0 ~ 15	0 ~ 15
Cb offset2	CXA2101 0 X 10 D7:D4	7	0 ~ 15	0 ~ 15
SDA9280 LPF	SDA9280 0 X 04 D6:D4	4	0 ~ 7	0 ~ 7
SDA9280 BPF	SDA9280 0 X 04 D3:D0	12	0 ~ 15	0 ~ 15
SDA9280 HPF	SDA9280 0 X 05 D3:D0	10	0 ~ 15	0 ~ 15
SDA9280 CORING/PHACOM	SDA9280 0 X 05 D6:D4	4	0 ~ 7	0 ~ 7
SDA9400 Y NR	SDA9400 0 X 1E D7:D4	15	0 ~ 15	0 ~ 15
SDA9400 C NR	SDA9400 0 X 10 D3:D0	15	0 ~ 15	0 ~ 15

SIM-816HC OPTION-BYTE

OPTION BYTE	SP43T6HF	SP47W3HF	SP55W3HF	REMARK
SOUND	DOLBY	DOLBY	DOLBY	DOLBY <--> A2/NICAM <--> V-DOLBY
WIDE	OFF	OFF	OFF	ON <--> OFF
SCART1	OFF	OFF	OFF	ON <--> OFF
PC	ON	ON	ON	ON <--> OFF
AUTO FM	ON	ON	ON	ON <--> OFF
PIP	DOUBLE	DOUBLE	DOUBLE	OFF <--> 1-TUNER <--> 2-TUNER <--> DOUBLE
HIGH DEVIATION	ON	ON	ON	ON <--> OFF

4-4-3 W3 EU FACTORY DATA

VIDEO ADJUSTMENT

NO	ITEM	DEFAULT VALUE	CONTROL IC
0	R Drive	29 (0 ~ 63)	CXA2101
1	B Drive	36 (0 ~ 63)	CXA2101
2	G Drive	32 (0 ~ 63)	CXA2101
3	Gamma	8 (0 ~ 15)	CXA2101
4	R Cutoff	31 (0 ~ 63)	CXA2101
5	B Cutoff	15 (0 ~ 63)	CXA2101
6	G Cutoff	32 (0 ~ 63)	CXA2101
7	Sub Contrast	15 (0 ~ 63)	CXA2101
8	Sub Bright	28 (0 ~ 63)	CXA2101
9	Sub Color	9 (0 ~ 63)	CXA2101
10	Sub Tint	9 (0 ~ 63)	CXA2101
11	V Peaking	8 (0 ~ 63)	VPC3230
12	TTX Contrast	7 (0 ~ 63)	CXA2101
13	TTX Bright	0 (0 ~ 63)	CXA2101
14	PIP Contrast	43 (0 ~ 63)	VPC3230
15	Not used	-	-
16	Cg R Contrast	31 (0 ~ 63)	CXA2101
17	Cg G Contrast	31 (0 ~ 63)	CXA2101
18	Cg B Contrast	15 (0 ~ 63)	CXA2101

Y.C DELAY

NO	ITEM	DEFAULT VALUE	CONTROL IC
0	PAL-B/G	6 (0 ~15)	SDA9280
1	PAL-D/K/L	8 (0 ~15)	SDA9280
2	PAL-I	8 (0 ~15)	SDA9280
3	SECAM-B/G	5 (0 ~15)	SDA9280
4	SECAM-D/K/L	7 (0 ~15)	SDA9280
5	NTSC	-	-
6	PAL-AV	6 (0 ~15)	SDA9280
7	SECAM-AV	4 (0 ~15)	SDA9280
8	NTSC-AV	5 (0 ~15)	SDA9280
9	RGB	7 (0 ~15)	SDA9280
10	DVD	9 (0 ~15)	SDA9280
11	YC	9 (0 ~15)	SDA9280

DEFIECTION NORMAL
(When a PAL signal is input)

NO	ITEM	DEFAULT VALUE	CONTROL IC
0	P.V-Size	-40 (-128 ~ 127)	SDA9361
1	P.V-Sft	-34 (-128 ~ 127)	SDA9361
2	P.V-Lin	0 (-128 ~ 127)	SDA9361
3	P.V-Corr	0 (-128 ~ 127)	SDA9361
4	P.EW-Wht	44 (-128 ~ 127)	SDA9361
5	P.EW-Pbl	-27 (-128 ~ 127)	SDA9361
6	P.H-Sft	0 (-63 ~ 64)	SDA9361
7	P.EW-Tpz	0 (-128 ~ 127)	SDA9361
8	P.Bow	0 (-128 ~ 127)	SDA9361
9	P.Angle	0 (-128 ~ 127)	SDA9361
10	P.EW-UpCr	0 (-128 ~ 127)	SDA9361
11	P.EW-LoCr	0 (-128 ~ 127)	SDA9361
12	P.Hor-EHT	0 (0 ~ 255	SDA9361
13	P.Ver-EHT	0 (0 ~ 255)	SDA9361
14	P.Int.Vol.Ref	0 (-16 ~ 15)	SDA9361
15	P.Hsync Delay	10 (-128 ~ 127)	SDA9361
16	P.PIP H-Position	7 (0 ~ 15)	VPC3230
17	P.PIP V-Position	7 (0 ~ 15)	VPC3230
18	P.Not used	-	-
19	P.Not used	-	-
20	P.CG V-amp Offset	30 (-128 ~ 127)	SDA9361

DEFIECTION NORMAL
(When a NTSC signal is input)

NO	ITEM	DEFAULT VALUE	CONTROL IC
0	N.V-Size	-40 (-128 ~ 127)	SDA9361
1	N.V-Sft	-34 (-128 ~ 127)	SDA9361
2	N.V-Lin	0 (-128 ~ 127)	SDA9361
3	N.V-Corr	0 (-128 ~ 127)	SDA9361
4	N.EW-Wht	44 (-128 ~ 127)	SDA9361
5	N.EW-Pbl	-27 (-128 ~ 127)	SDA9361
6	N.H-Sft	0 (-63 ~ 64)	SDA9361
7	N.EW-Tpz	0 (-128 ~ 127)	SDA9361
8	N.Bow	0 (-128 ~ 127)	SDA9361
9	N.Angle	0 (-128 ~ 127)	SDA9361
10	N.EW-UpCr	0 (-128 ~ 127)	SDA9361
11	N.EW-LoCr	0 (-128 ~ 127)	SDA9361
12	N.Hor-EHT	0 (0 ~ 255	SDA9361
13	N.Ver-EHT	0 (0 ~ 255)	SDA9361
14	N.Int.Vol.Ref	0 (-16 ~ 15)	SDA9361
15	N.Hsync Delay	10 (-128 ~ 127)	SDA9361
16	N.PIP H-Position	7 (0 ~ 15)	VPC3230
17	N.PIP V-Position	7 (0 ~ 15)	VPC3230
18	N.Not used	-	-
19	N.Not used	-	-
20	N.CG V-amp Offset	30 (-128 ~ 127)	SDA9361

PICT. IMPROVE

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Limit Level	3 (0 ~ 3)	Luminance signal edge enhancement setting	CXA2101
1	System	2 (0 ~ 3)	Signal frequency band switching	CXA2101
2	CLP-MSK	0 (0 ~ 3)	Switching of clamping pulse width in various ways	CXA2101
3	ABL-MODE	3 (0 ~ 3)	Switching of ABL mode	CXA2101
4	ABL-TH	1 (0 ~ 3)	Adjustment of threshold voltage for ABL-IN input	CXA2101
5	DTV-SYNC	9 (0 ~ 255)	DTV-Sync	CXA2101
6	Cr-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1and SEL IN systems	CXA2101
7	Cb-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1and SEL IN systems	CXA2101
8	Cr-Offset2	9 (0 ~ 15)	For canceling the offset between CrCb of EXT systems	CXA2101
9	Cb-Offset2	7 (0 ~ 15)	For canceling the offset between CrCb of EXT systems	CXA2101
10	CTI-Level	1 (0 ~ 3)	Color difference signal edge enhancement setting	CXA2101
11	R-Y/R	2 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
12	R-Y/B	5 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
13	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
14	G-Y/B	7 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101
15	LRGB2-Level	5 (0 ~ 15)	LRGB2 system picture level control	CXA2101
16	PABL-Level	14 (0 ~ 15)	Setting of level detection DC at RGB-OUT of PEAK-ABL	CXA2101
17	BLK-Bottom	0 (0 ~ 15)	RGB-OUT bottom limiter level control(valid when BLKSW = 1)	CXA2101
18	SUB-SHP	2 (0 ~ 3)	Sharpness center control	CXA2101
19	SUB-FO	2 (0 ~ 3)	Sharpness f_0 setting	CXA2101
20	PRE-OVER	3 (0 ~ 3)	Presoot to overshoot ratio setting	CXA2101
21	LTI-Level	1 (0 ~ 3)	Luminance signal edge enhancement setting	CXA2101
22	VM-Levle	2 (0 ~ 3)	VM-OUT level control	CXA2101
23	VM-Delay	0 (0 ~ 3)	VM-OUT phase control	CXA2101
24	DC-TRAN	3 (0 ~ 3)	Y system DC transmission ratio setting	CXA2101
25	D-PIC	3 (0 ~ 3)	Dynamic picture(black expansion)control	CXA2101
26	DCTI	8 (0 ~ 255)	Digital Color Transition Improvement Control	SDA9280
27	BPF-LPF	70 (0 ~ 255)	Luminance Peaking Control -Gain of band-pass filter -Gain of low-pass filter	SDA9280
28	HPF-Coing	8 (0 ~ 255)	Luminance Peaking Control -Gain of high-pass filter -Gain of high-and band-pass filter	SDA9280

PICT. IMPROVE

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
29	NR-Luminance	8 (0 ~ 14)	Luminance Noise Reduction	SDA9400
30	NR-Chrominace	6 (0 ~ 14)	Chrominance Noise Reduction	SDA9400

PICT. IMPROVE. VGA(NOT USED)

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	System	2 (0 ~ 3)	Signal frequency band switching	CXA2101
1	Cr-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
2	Cb-offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
3	R-Y/R	2 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
4	R-Y/B	5 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
5	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
6	G-Y/B	7 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101
7	SUB-SHP	2 (0 ~ 3)	Sharpness center control	CXA2101
8	SUB-FO	3 (0 ~ 3)	Sharpness f_0 setting	CXA2101
9	PRE-OVER	3 (0 ~ 3)	Preshoot to overshoot ratio setting	CXA2101
10	LTI-Level	1 (0 ~ 3)	Luminance signal edge enhancement setting	CXA2101
11	VM-Level	2 (0 ~ 3)	VM-OUT level control	CXA2101
12	VM-Delay	0 (0 ~ 3)	VM-OUT phase control	CXA2101
13	DC-TRAN	2 (0 ~ 3)	Y system DC transmission ratio setting	CXA2101
14	D-PIC	3 (0 ~ 3)	Dynamic picture(black expansion)control	CXA2101

PICT. IMPROVE. SECAM

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Cr-Offset1	7 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
1	Cb-offset1	11 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
2	R-Y/R	3 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
3	R-Y/B	7 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
4	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
5	G-Y/B	2 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101

PICT. IMPROVE. RGB

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Cr-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
1	Cb-offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
2	DCT1	0 (0 ~ 255)	Digital Color Transition Improvement Control	SDA9280
3	R-Y/R	2 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
4	R-Y/B	5 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
5	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
6	G-Y/B	7 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101
7	VM-Level	0 (0 ~ 3)	VM-OUT level control	CXA2101
8	VM-Delay	0 (0 ~ 3)	VM-OUT phase control	CXA2101
9	V-PEAKING	0 (0 ~ 12)	Vertical Peaking	VPC3230
10	BPF-LPF	72 (0 ~ 255)	Luminance Peaking Control -Gain of band-pass filter -Gain of low-pass filter	SDA9280
11	HPF-Coring	10 (0 ~ 255)	Luminance Peaking Control -Gain of band-pass filter -Gain of low-pass filter	SDA9280

PICT. IMPROVE. DVD

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Cr-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
1	Cb-offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
2	DCT1	0 (0 ~ 255)	Digital Color Transition Improvement Control	SDA9280
3	R-Y/R	2 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
4	R-Y/B	5 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
5	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
6	G-Y/B	7 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101
7	VM-Level	1 (0 ~ 3)	VM-OUT level control	CXA2101
8	VM-Delay	0 (0 ~ 3)	VM-OUT phase control	CXA2101
9	V-PEAKING	0 (0 ~ 12)	Vertical Peaking	VPC3230
10	BPF-LPF	72 (0 ~ 255)	Luminance Peaking Control -Gain of band-pass filter -Gain of low-pass filter	SDA9280
11	HPF-Coring	10 (0 ~ 255)	Luminance Peaking Control -Gain of high-pass filter -Gain of high-and band-pass filter	SDA9280

PICT. IMPROVE. YC

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Cr-Offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
1	Cb-offset1	9 (0 ~ 15)	For canceling the offset between CrCb of IN1 and SEL IN systems	CXA2101
2	DCT1	0 (0 ~ 255)	Digital Color Transition Improvement Control	SDA9280
3	R-Y/R	2 (0 ~ 15)	R-Y axis +(R-Y) component setting	CXA2101
4	R-Y/B	5 (0 ~ 15)	R-Y axis -(B-Y) component setting	CXA2101
5	G-Y/R	10 (0 ~ 15)	G-Y axis -(R-Y) component setting	CXA2101
6	G-Y/B	7 (0 ~ 15)	G-Y axis -(B-Y) component setting	CXA2101
7	VM-Level	1 (0 ~ 3)	VM-OUT level control	CXA2101
8	VM-Delay	0 (0 ~ 3)	VM-OUT phase control	CXA2101
9	V-PEAKING	0 (0 ~ 12)	Vertical Peaking	VPC3230
10	BPF-LPF	72 (0 ~ 255)	Luminance Peaking Control -Gain of band-pass filter -Gain of low-pass filter	SDA9280
11	HPF-Coring	10 (0 ~ 255)	Luminance Peaking Control -Gain of high-pass filter -Gain of high-and band-pass filter	SDA9280

P.STD CHANGE

NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	STD Bright	32 (0 ~ 63)	Standard Mode Brightness	CXA2101
1	STD Contrast	42 (0 ~ 63)	Standard Mode Contrast	CXA2101
2	STC Color	32 (0 ~ 63)	Standard Mode Color	CXA2101
3	STD Sharpness	32 (0 ~ 63)	Standard Mode Sharpness	CXA2101
4	STD Tint	0 (-31 ~ 31)	Standard Mode Tint	VPC3230
5	STD Colortone	0 (0 ~ 4)	Standard Mode Colortone	CXA2101
6	Sports Bright	32 (0 ~ 63)	Sports Mode Brightness	CXA2101
7	Sports Contrast	51 (0 ~ 63)	Sports Mode Contrast	CXA2101
8	Sports Color	32 (0 ~ 63)	Sports Mode Color	CXA2101
9	Sports Sharpness	38 (0 ~ 63)	Sports Mode Sharpness	CXA2101
10	Sports Tint	0 (-31 ~ 31)	Sports Mode Tint	VPC3230
11	Sports Colortone	3 (0 ~ 4)	Sports Mode Colortone	CXA2101
12	Mild Bright	35 (0 ~ 63)	Mild Mode Brightness	CXA2101
13	Mild Contrast	32 (0 ~ 63)	Mild Mode Contrast	CXA2101
14	Mild Color	32 (0 ~ 63)	Mild Mode Color	CXA2101
15	Mild Sharpness	28 (0 ~ 63)	Mild Mode Sharpness	CXA2101
16	Mild Tint	0 (-31 ~ 31)	Mild Mode Tint	VPC230
17	Mild Colortone	1 (0 ~ 4)	Mild Mode Colortone	CXA2101
18	Natural Bright	28 (0 ~ 63)	Natural Mode Brightness	CXA2101
19	Natural Contrast	63 (0 ~ 63)	Natural Mode Contrast	CXA2101
20	Natural Color	32 (0 ~ 63)	Natural Mode Color	CXA2101
21	Natural Sharpness	45 (0 ~ 63)	Natural Mode Sharpness	CXA2101
22	Natural Tint	0 (-31 ~ 31)	Natural Mode Tint	VPC3230
23	Natural Colortone	3 (0 ~ 4)	Natural Mode Colortone	CXA2101
24	VGA Bright	32 (0 ~ 63)	Not used	CXA2101
25	VGA Contrast	32 (0 ~ 63)	Not used	CXA2101
26	RGB Color	5 (0 ~ 255)	RGB Mode Color	VPC3230
27	RGB Color_L	209 (0 ~ 255)	RGB Mode Color	VPC3230
28	RGB Tint	0 (0 ~ 255)	RGB Mode Tint	VPC3230
29	RGB Bri_Cont	27 90 ~ 255)	RGB Mode Brightness, Contrast	VPC3230

P.STD CHANGE

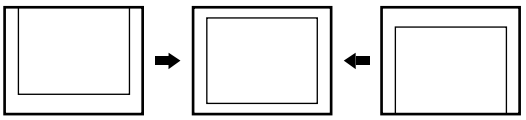
NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
30	RGB Bri-Cont_L	68 (0 ~ 255)	RGB Mode Brightness, Contrast	VPC3230
31	FB Gain	144 (0 ~ 255)	Fast Blanking Signal Gain Control	VPC3230
32	Slicer Level	15 (0 ~ 255)	Slicer Level Control	VPC3230

SIDE PANEL ADJUST

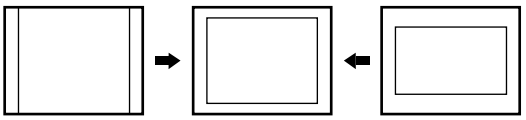
NO	ITEM	DEFAULT VALUE	DESCRIPTION	CONTROL IC
0	Side Panel Pos.	153 (0 ~ 255)	Side Panel Position Control	SDA9280
1	Side Panel Width	69 (0 ~ 255)	Side Panel Width Control	SDA9280
2	Side Panel Level	7 (0 ~ 15)	Side Panel Luminance Control	SDA9280
3	Side Panel B-Y	0 (0 ~ 15)	Side Panel Chrominance Control	SDA9280
4	Side Panel R-Y	0 (0 ~ 15)	Side Panel Chrominance Control	SDA9280

4-5 Screen Change (When adjusting I²C Bus Geometric items)

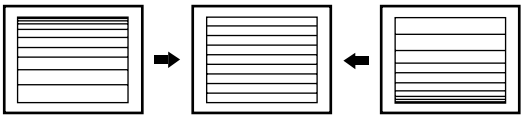
1 V SHIFT



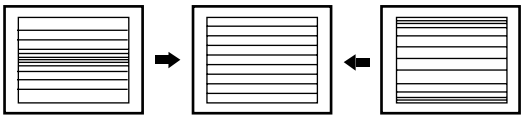
6 V SIZE



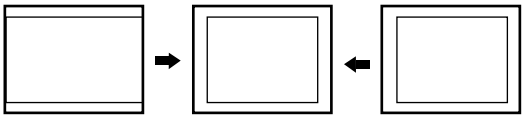
2 V LINEARITY



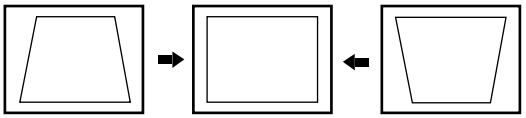
7 V - S - CORRECTION



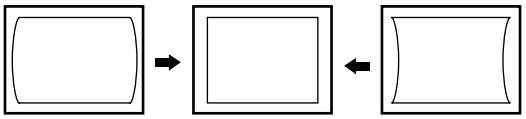
3 H SIZE



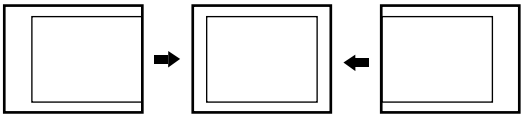
8 PIN PHASE



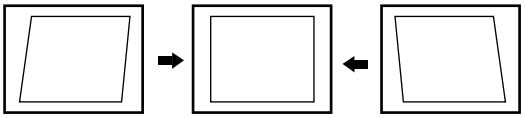
4 PIN AMP



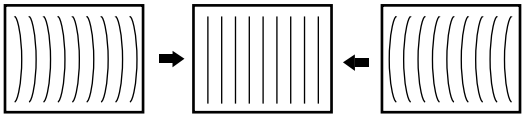
9 H SHIFT



5 V ANGLE



10 V BOW



4-6 Other Adjustments

4-6-1 Screen Adjustment

1. Warm up the TV for at least 30 minutes.
2. Turn to the Video Mode (No Signal) using a remote-control.
3. Connect an oscilloscope to RK,GK,BK.
4. Adjust the VR (VR501, VR531, VR561) screen so that RK, GK, BK pulse is 20Vp-p each. (Turn the R,G,B VR screen fully counterclockwise in the area of each flyback line.)

4-6-2 White Balance Adjustment

1. Select the “STANDARD” video mode.
2. Input 100% white pattern.
3. In the stand-by mode, press the remote-control keys in the following sequence:
   Displsy → Menu → Mute → Power ON
4. Warm up the TV for at least 30 minutes.
5. Input a 10-step signal.
6. R-cut off, B-cut off, and G-cut off by pressing the Volume +/- keys.
7. Adjust the low light with viewing the dark side of the screen.
8. Select R-drive, G-drive, and B-drive by pressing the Volume +/- keys.
9. Adjust the high light with viewing the light side of the screen.
10. If necessary, redo adjustments 6~9.
11. Press the Menu key to exit.

4-6-3 Sub-Brightness Adjustment

1. Input a sub-brightness adjustment signal. (TOSHIBA PATTERN)
2. In the stand-by mode, press the remote-control keys in the following sequence :
   Displsy → Menu → Mute → Power ON
3. Select SBT by pressing the Volume +/- keys.
4. Adjust so that the 63 step on the right side of the screen is not seen (Use the Volume +/- keys).
5. Press the Menu key to exit.

4-6-4 High Voltage (29KV) Check

PRECAUTION

1. Input a lion head pattern.
2. Select “STANDARD” video mode.
3. Warm up the TV for at least 10 minutes.
4. Use a 1000:1 probe.

ADJUSTMENT

1. Connect the (+) terminal of the 1000:1 probe to the high voltage distributor and the (-) terminal to GND (located on the deflection board).
2. Adjust RR471S (located on the deflection board) so that the digital meter indicates DC 29V ± 0.1V.

4-6-5 F.S. (Fail Safe) Adjustment

Note : The finished product has a well-mounted VR (RR402S).
If necessary, do the F.S. adjustments in the following sequence.

1. Use a digital multimeter.
2. Connect the digital multimeter to the JIG pin (DZ482S) terminals
3. Adjust VR (RR402S) so that the voltage becomes 2.25V.
4. After the adjustments are complete, be sure to mount VR (RR402S) correctly.

4-6-6 F.S. (Fail Safe) Circuit Check

Note : The F.S. Circuit check must be performed after servicing.

1. Turn on the TV.
2. Select the “STANDARD” video mode.
3. Short F/S Test point (located on the SUB PCB). Then, both sound and picture disappear. (Note: Even if the shorted terminals are removed, both sound and picture do not appear. This proves the F.S. circuit is working.)
4. To restore both sound and picture, turn off the TV and reset it after about 30 seconds.

4-6-7 Static Focus Adjustment

PRECAUTION

1. Select the “STANDARD” video mode.
2. Input a crosshatch pattern.
3. Cover the lenses that are not being adjusted.
4. Connect a convergence jig and read data.
5. Adjust the lens for best focus. (See Fig, 4-1, next page)

STATIC FOCUS (CONTINUED)

Vary the focus pack VR (Red, Blue) on the front cabinet. Adjust the TV for best possible focus around the center of the crosshatch pattern, without losing overall screen balance.
Figure Crosshatch Pattern
Examine these points together.

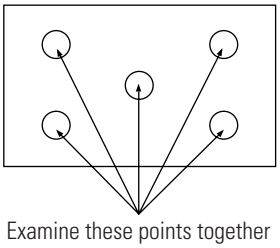


Fig. 4-1 Crosshatch Pattern.

4-6-8 Lens Focus Adjustment

PRECAUTIONS

1. Do this adjustment after the static focus adjustment and the tilt adjustment.
2. Select the “STANDARD” video mode. (Contrast:100, Brightness:50)
3. Input a crosshatch pattern.

ADJUSTMENT

1. Loosen the lens screws.
2. Cover the two lenses that are not being adjusted.
3. Adjust the lens, observing the color aberration vertically and horizontally within 3 blocks of the center of the crosshatch pattern.
4. When the lens is turned clockwise, the color aberration will change as follows:

Lens	Color Aberration Change
R	Orange - Crimson
G	Blue - Red
B	Purple - Green

5. Green lens adjustment:
   Set the lens at the point where Blue just changes to Red. If the color aberration is irregular throughout the picture screen, adjust the lens to show Red color aberration (approximately 1~3 mm area) within a 3-block grid around the horizontal center-line. If the color aberration is irregular, adjust the lens as shown in the diagram below. (Accurate alignment of Green is important for overall color quality.)
6. Red lens adjustment
   Set the Red lens at the point where Orange becomes Crimson.
7. Blue lens adjustment
   Set the Blue lens at the point where Purple becomes Green.

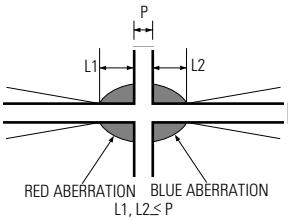


Fig. 4-2 Color Aberration

4-6-9 Horizontal Dynamic Focus Adjustment

PRECAUTION

1. Input a crosshatch pattern.
2. Select the “STANDARD” video mode.
3. Warm up the set for at least 10 minutes.

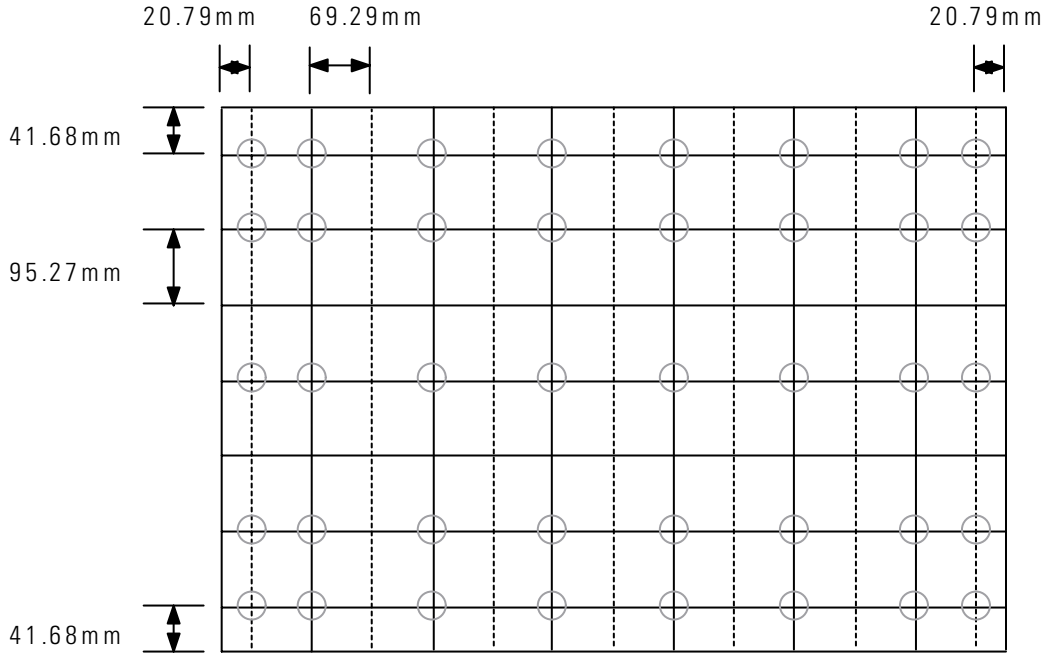
ADJUSTMENT

1. Cover the Red and Blue lenses.
2. Use a digital multimeter.
3. Connect the '+' terminal of digital multimeter to D-Focus and the '-' terminal to GND.
4. Adjust L434 located on the sub PCB so that the digital multimeter indicates AC690 ±20Vp-p.(WIDE AC600 ±20Vp-p)
5. Balance the left and right sides of the dynamic focus lines.

4-7 SCREEN-JIG

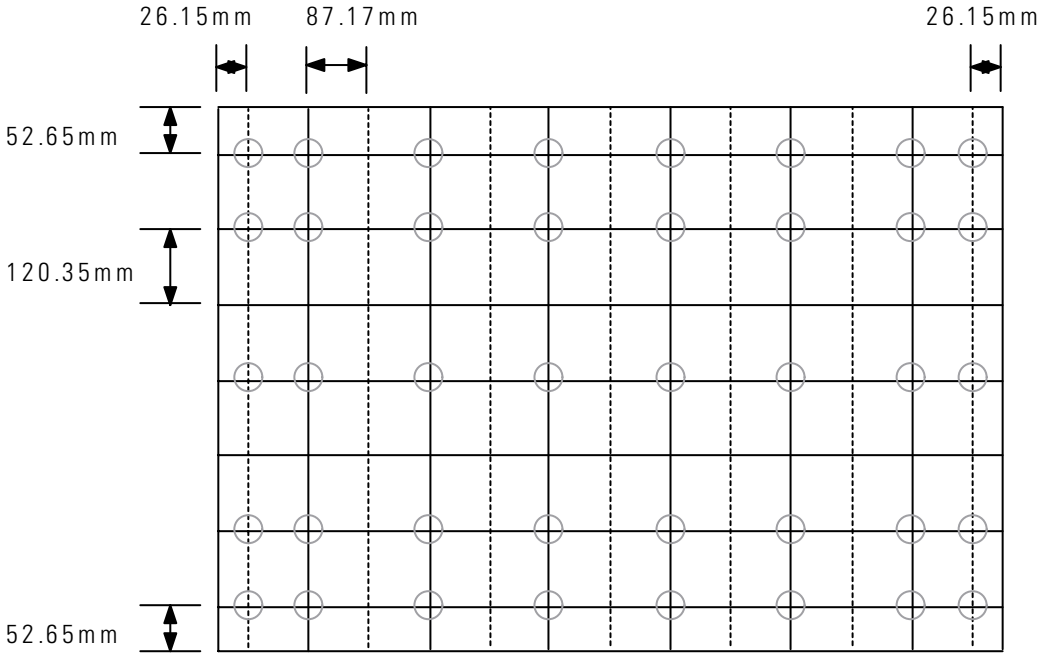
4-7-1 43T6 Normal Mode

Normal 4:3 Mode Screen Size : X 873, Y 655 (X:378=9*2+30*12, Y:440=28*2+64*6)



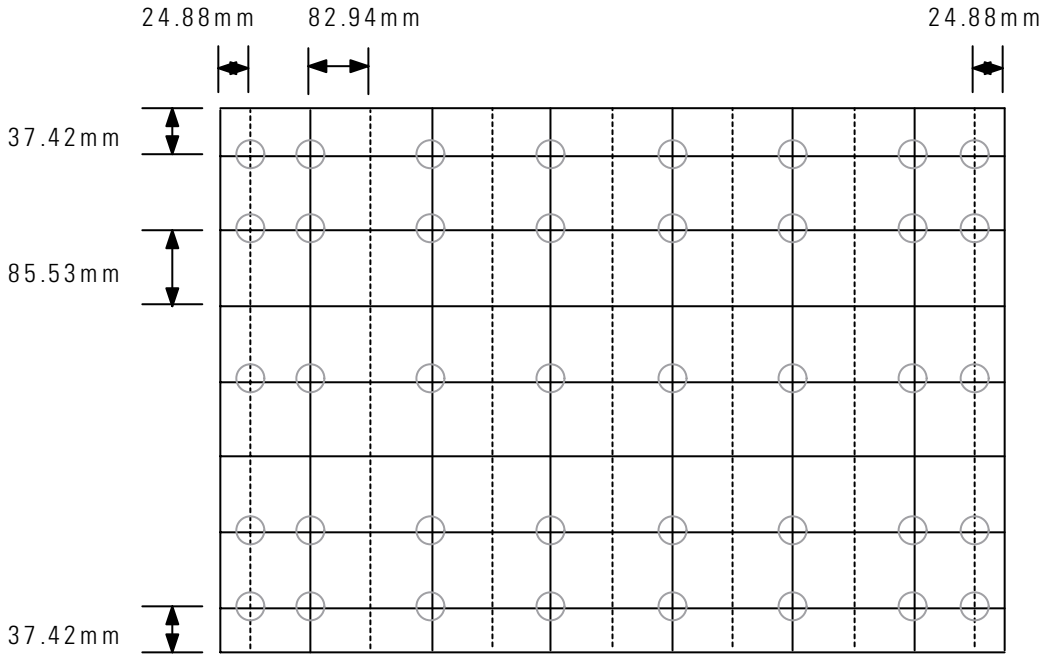
4-7-2 54T6 Normal Mode

Normal 4:3 mode Screen Size : X 1098.4, Y 827.4 (X:378=9*2+30*12, Y:440=28*2+64*6)



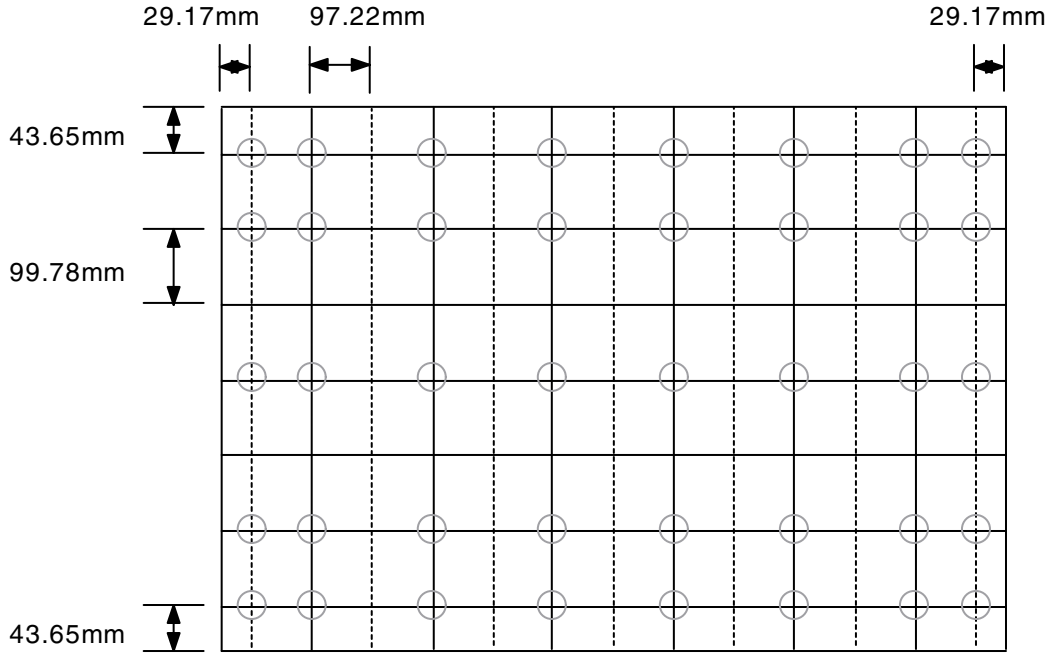
4-7-3 47W3 Normal Mode

Normal 4:3 mode Screen Size : X 1045, Y 588 (X:378=9*2+30*12, Y:440=28*2+64*6)



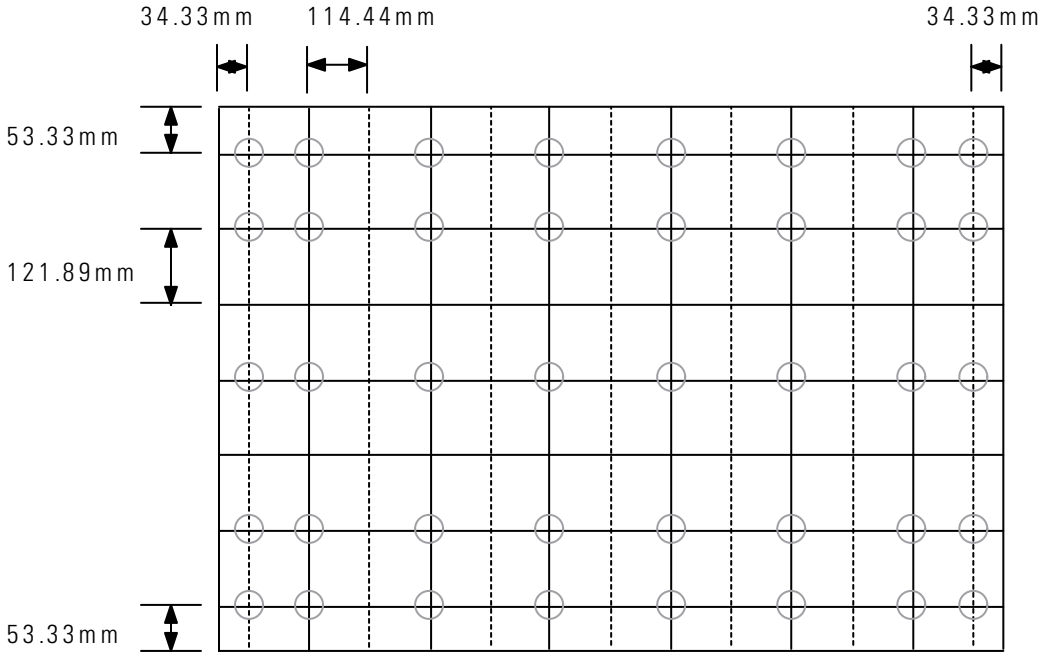
4-7-4 55W3 Normal Mode

Normal 4:3 mode Screen Size : X 1225, Y 686 (X:378=9*2+30*12, Y:440=28*2+64*6)



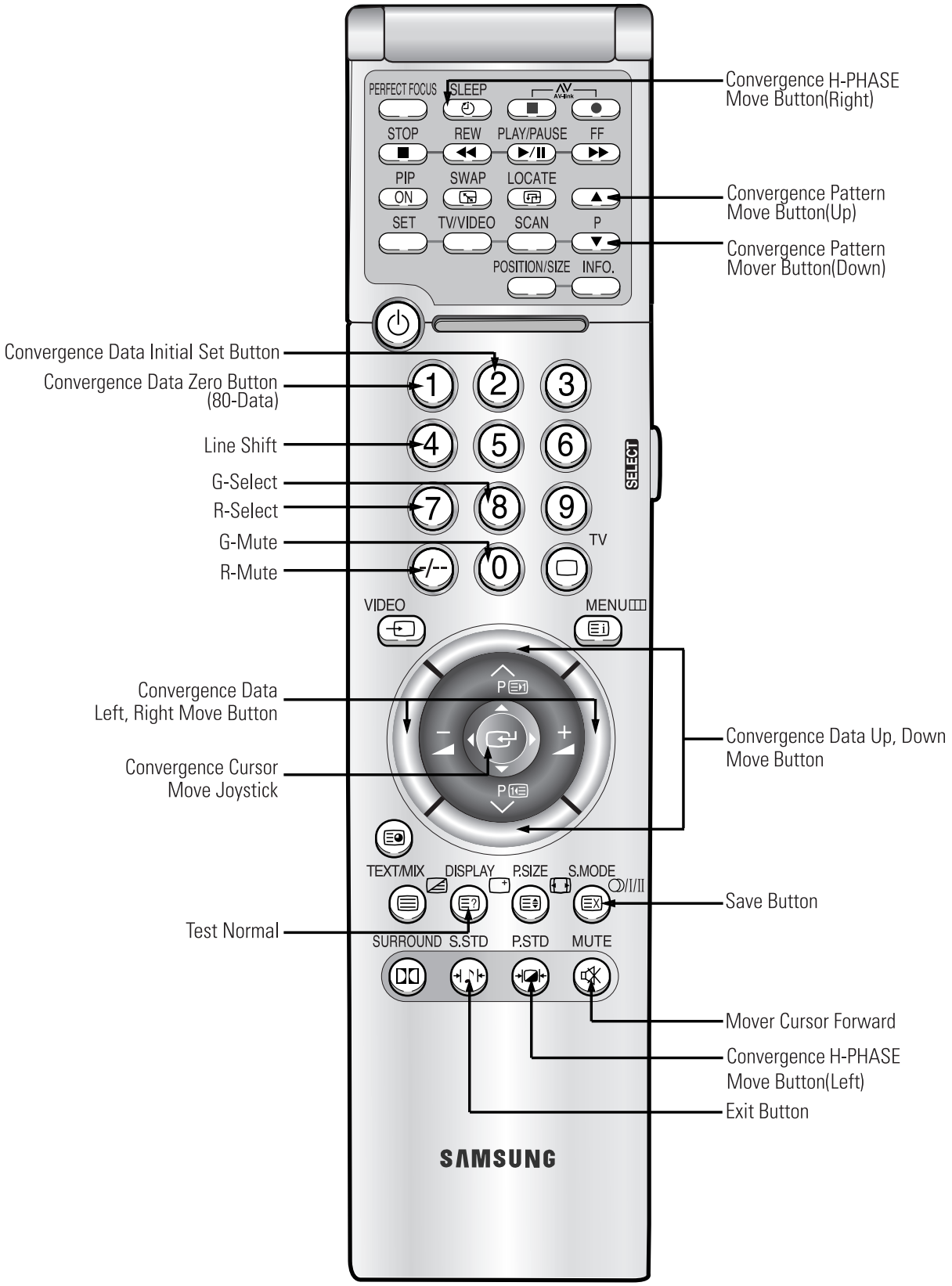
4-7-5 65W3 Normal Mode

Normal mode Screen Size : X 1442, Y 838 (X:378=9*2+30*12, Y:440=28*2+64*6)

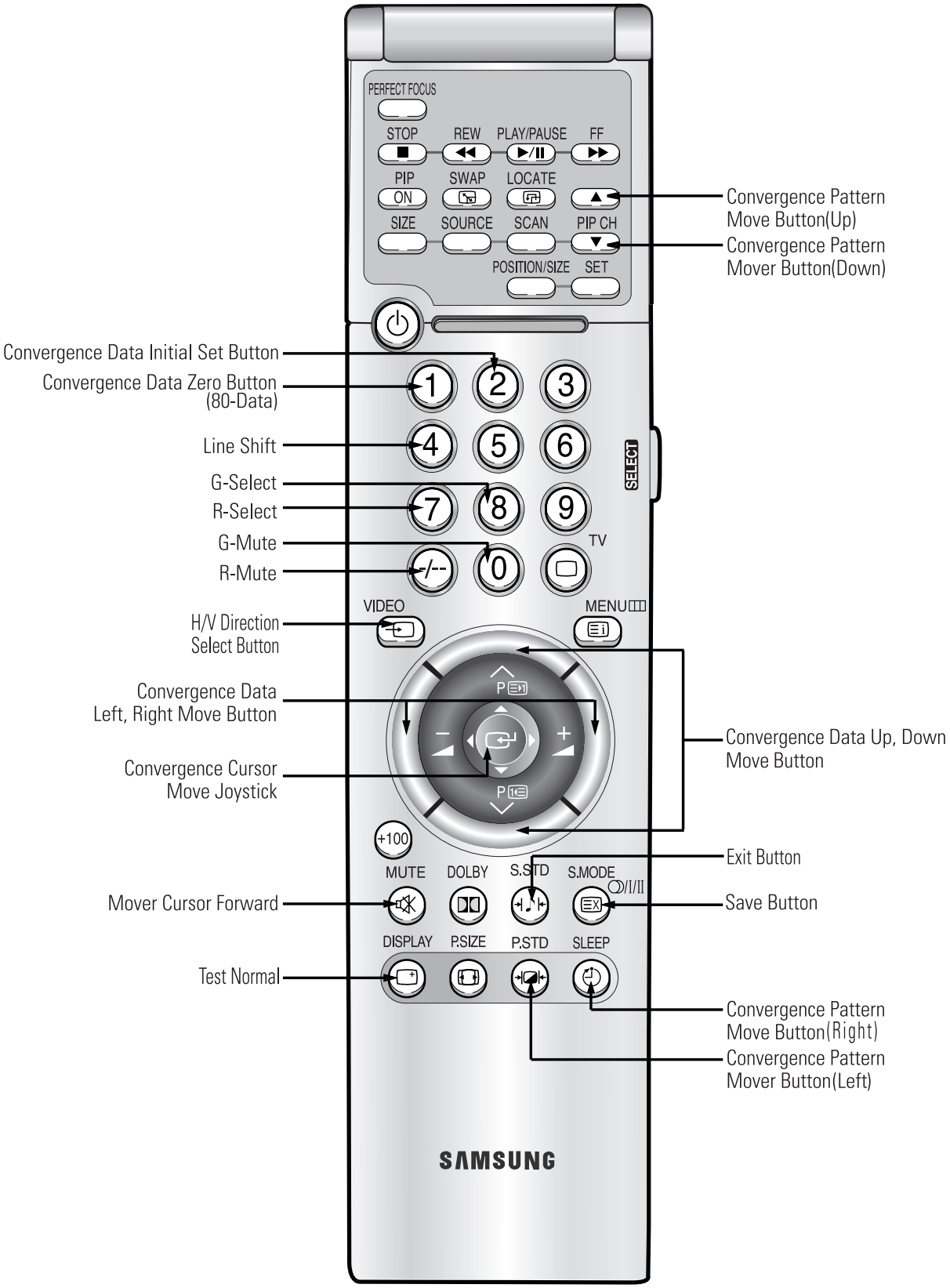


4-8 Remote Control for Servicing

4-8-1 WESTERN EUROPE



4-8-2 CHINA


PERFECT FOCUS
STOP
REW
PLAY/PAUSE
FF
PIP ON
SWAP
LOCATE
SIZE
SOURCE
SCAN
PIP CH
POSITION/SIZE
SET
SELECT
TV
VIDEO
MENU
+100
MUTE
DOLBY
S.STD
S.MODE
DISPLAY
P.SIZE
P.STD
SLEEP
SAMSUNG
Convergence Pattern Move Button(Up)
Convergence Pattern Mover Button(Down)
Convergence Data Initial Set Button
Convergence Data Zero Button (80-Data)
Line Shift
G-Select
R-Select
G-Mute
R-Mute
H/V Direction Select Button
Convergence Data Left, Right Move Button
Convergence Cursor Move Joystick
Convergence Data Up, Down Move Button
Exit Button
Mover Cursor Forward
Save Button
Test Normal
Convergence Pattern Move Button(Right)
Convergence Pattern Mover Button(Left)

4-8-3 KEY Function

1. R-SELECT (7)
   Press to select RED color.

2. G-SELECT (8)
   Press to select GREEN color.

3. B-SELECT (9)
   Press to select BLUE color.

4. R-MUTE (+100)
   Press to mute RED color.

5. G-MUTE (0)
   Press to mute GREEN color.

6. B-MUTE (-/--)
   Press to mute BLUE color.

7. CANCEL KEY (3)
   Press to revert to the previous data during the Convergence Adjustment.

8. TEST / NORMAL (显示)
   Press to check TV mode in the Convergence Mode.

9. LINE SHIFT (4)
   Press to move a line up / down or left / right.

10. FACTORY DATA SELECT BUTTON (2)
    Press to call the factory default values.

11. H / V DIRECTION SELECT BUTTON (项目)
    Press to switch the cursor direction horizontally or vertically.

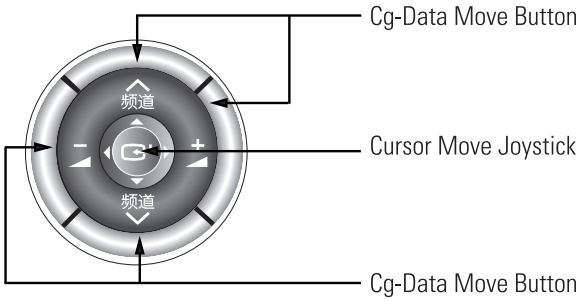
12. SAVE BUTTON (立体声切换)
    After the Convergence Adjustments are completed, press to save data.

13 EXIT BUTTON (伴音效果)
   After the Convergence adjustments are completed, press to exit to TV mode.

14. MOVE CURSOR FORWARD 静音
Press to move the cursor right or down.

15. MOVE CURSOR REVERSE JOYSTICK(Option 电视/录像)
Press to move the cursor left or up.

16. CONVERGENCE PICTURE MOVE BUTTON



17. CONVERGENCE MOVE BUTTON 图像效果
Press to move the convergence left ( ) or right (定时) .

18. CONVERGENCE DATA ZERO BUTTON (1)
Press to zero the convergence correction data.

19. INITIAL DATA SET BUTTON (2)

Changes when applying Almighty-Cg, Module (How to extract the basic Cg Data)

Inch (Type)	Model Name	Basic Data	Screen Display	Discription
	Representative Model	Number after entring the Cg-Mode		
43″ (43T6)	SP43T6	5-436 (Press in regular order)	┼┼┼┼	White Oval on the background (white circle)
54″ (54T6)	SP54T6	5-546 (Press in regular order)	┼┼┼┼┼	
62″ (62T6)	SP62T6	5-626 (Press in regular order)	┼┼┼┼┼┼	White Oval on the background (white border)
47″(47W3)	SP47W3	5-479 (Press in regular order)	⬭⬭⬭⬭	White Oval on the background (white circle)
55″(55W3)	SP55W3	5-559 (Press in regular order)	⬭⬭⬭⬭⬭	
65″(65W3)	SP65W3	5-659 (Press in regular order)	⬭⬭⬭⬭⬭⬭	White Oval on the background (white border)

20. Data Shift Button 移动 Press to transmit data(PAL Mode / NTSC Mode)

4-9 Convergence Adjustment

Special Notes

✏ A sensor is attached on the center of each side of the Convergence Mode pattern (see figure below). The sensors are required for normal Perfect Focus function.

✏ Use a screen jig to do the convergence adjustments correctly (Especially, perform correct convergence adjustments on the center of each side where a sensor is located.)

✏ Do the convergence adjustments correctly. Otherwise, any Perfect Focus error can happen.

1. Warm up the TV for a least 30 minutes.

2. Input an PAL Signal.(Use an antenna or AV source.)

NOTE

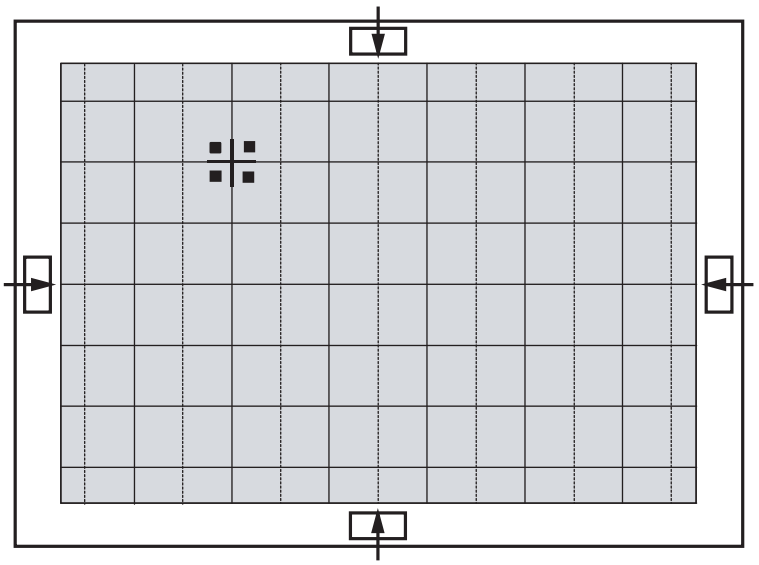
Make sure that deflection yoke are properly adjusted so that the center of Green, Red, Blue pattern is aligned on the center of screen jig.

3. Enter the Convergence Mode by Pressing the remote control keys in the following sequence:

静音 → 1 → 8 → 3

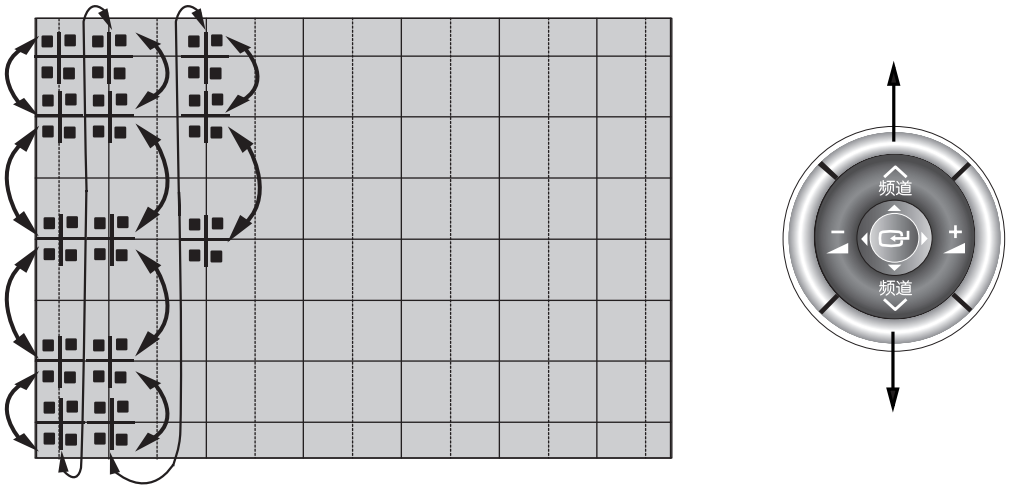
NOTE

If OSD displayed as shown in figure below, press the 立体声切换 I-II key to exit.
Then, redo step 3 to enter the Convergence Mode.
After entering the Convergence Mode, Stand by for about five seconds before doing the adjustments.



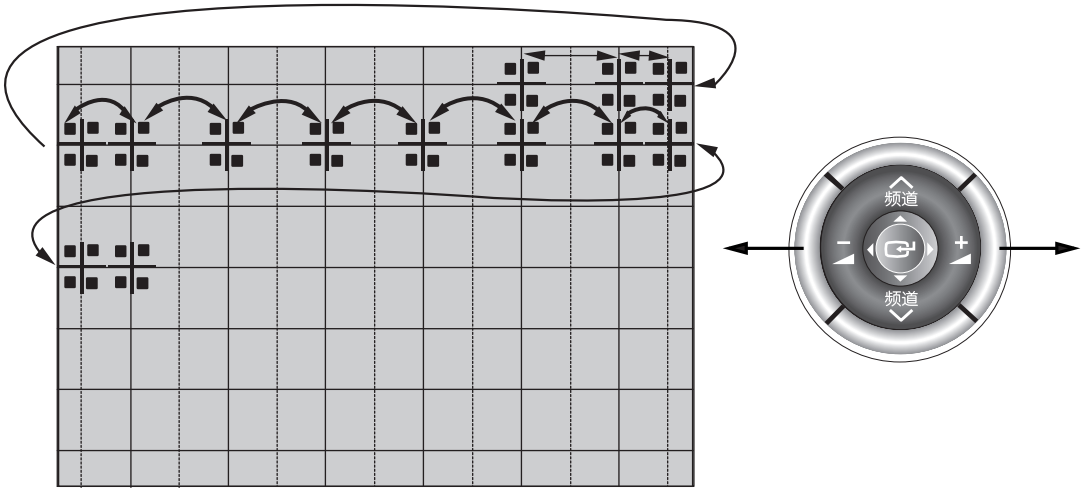
4. To adjust GREEN, first press the -/-- and the +100 keys, and then press the 8 key.

5. The 项目 key moves the cursor horizontally or vertically.

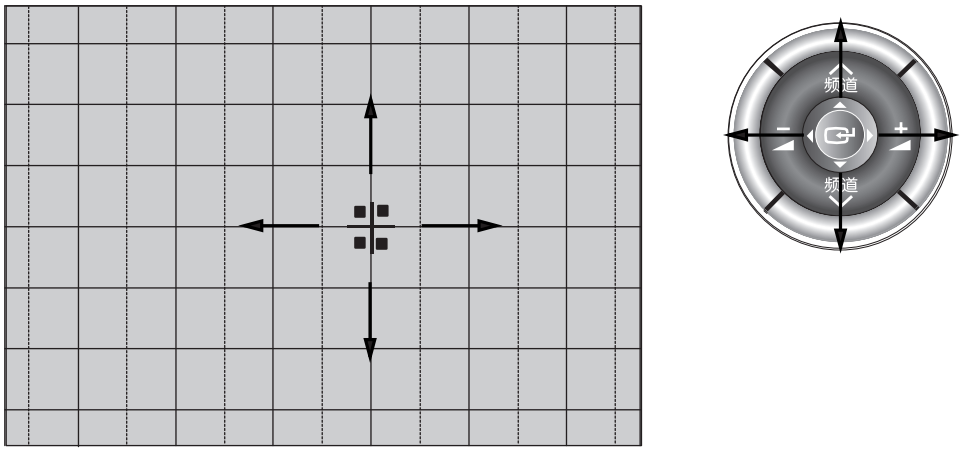


NOTE When the 项目 key is pressed once again, the cursor moves horizontally.

6. The 静音 key moves the cursor left, and the joystick(Option 电视/录像) key moves the cursor right.

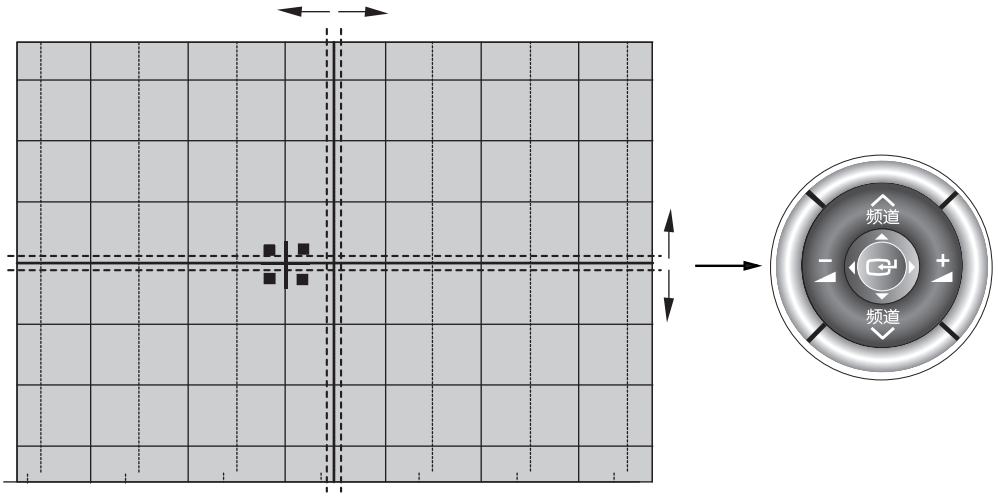


7. New Adjustment



NOTE Use the joystick on the remote control(type: TM63) to move the cursor.
Move the joystick left/right/up/down to move the cursor left/right/up/down.

8. Use the (4) key for overall balance.

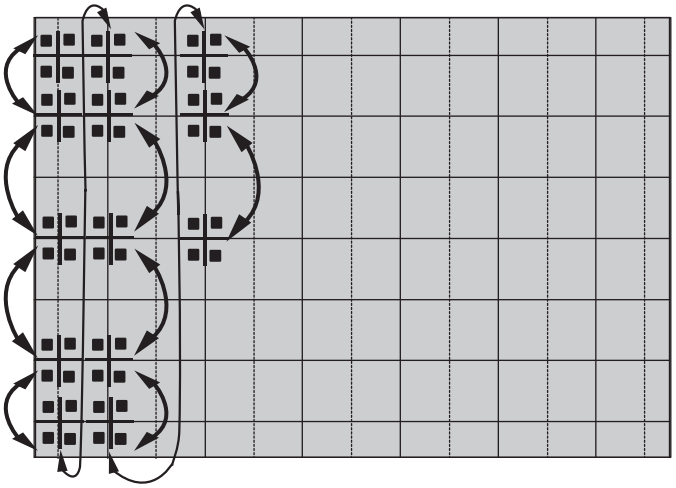


9. After the Line Shift is cancelled by pressing the (4) key, use the Channel and Volume keys (Up/Down) to make big adjustments.

10. After the green convergence adjustments are completed, press the 立体声切换 I-II key to save the data.

11. Superimpose the Red and Green colors by pressing the +100 and the 7 keys.

12. To adjust RED, redo steps 5~8.



When the cursor moves vertically 项目

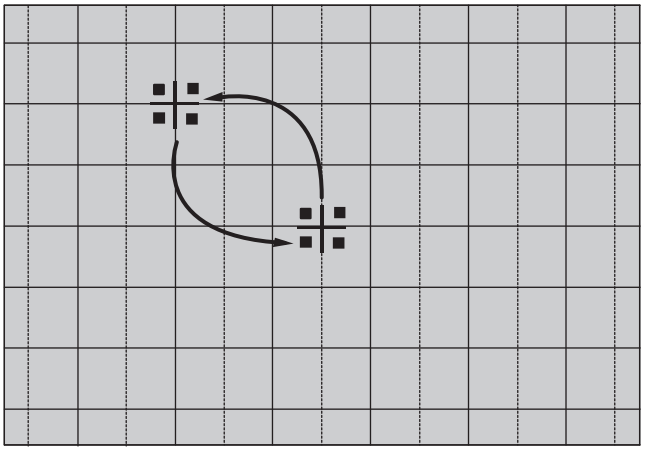
13. To superimpose the blue and green colors, press (1) the +100 key for R-Mute, (2) the -/-- key to cancel the B-Mute, and (3) the 9 key for B-select.

14. To adjust BLUE, redo steps 5 ~ 8, 12.

15. If any color is not properly adjusted when displaying the red, blue and green colors, readjust the color.

16. After the color adjustments are completed, press the 立体声切换 (I-II) key to save the data.

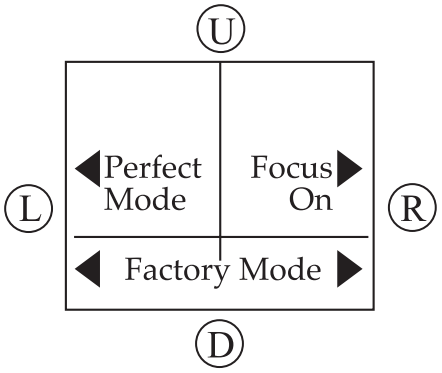
NOTE The cursor moves to center, and then automatically moves up and to the left about five seconds later.



17. After the adjustment is completely saved, press the Perfect Focus key to perform Auto Convergence(Factory Mode). Auto Convergence is performed in the following sequences:

G → R → B

UP → LEFT → DOWN → RIGHT



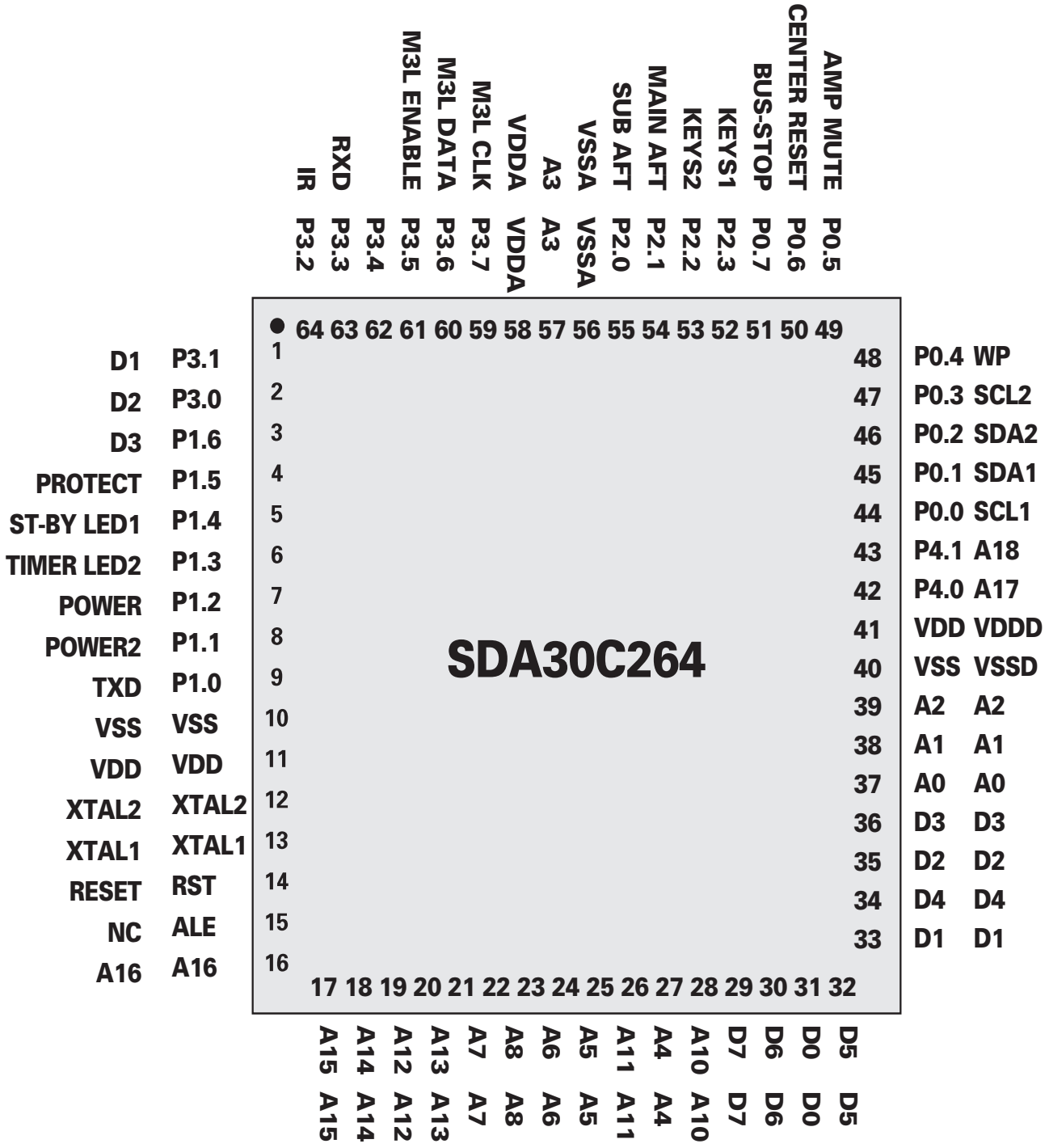
When Auto Convergence is complete, the data is automatically saved and the convergence pattern reverts.

NOTE
- After Factory Auto Convergence is complete, make sure that the cursor flickers for about 1 second on the center and then it is saved.
- Check the presence of error through the flicker of the cursor.
- When any error happens, be sure to re-do Factory Auto Convergence.
- When Convergence Adjustment is not normally done or the convergence center is misaligned with the sensing point, any adjustment error happens. Therefore, be sure to use a screen jig to correctly adjust during troubleshooting.

18. After the Convergence Adjustments are completed, press the 伴音效果 key to exit.

4-10 MICOM and Pins Voltage

4-10-1 Pin Layout(CW)



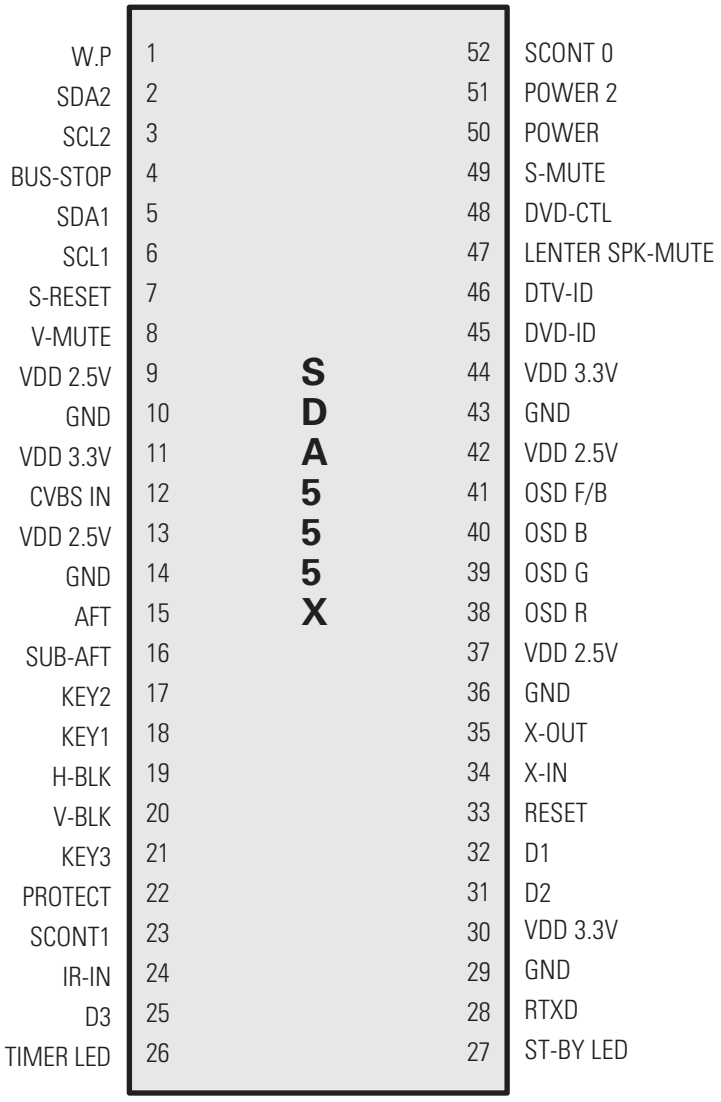
4-10-2 MICOM Pins(CW)

PIN NO.	ITEM	FUNCTION	OUT VOLT
1	D1	D1	
2	D2	D2	
3	D3	D3	
4	PROTECT	PROTECT	
5	ST-BY LED	ST-BY LED	
6	TIMER LED	TIMER LED	
7	POWER	POWER	
8	POWER2	POWER2	
9	TXD	TXD	
10	VSS	VSS	
11	VDD	VDD	
12	XTAL2	XTAL2	
13	XTAL1	XTAL1	
14	RESET	RESET	
15	NC	NC	
16	A16	A16	
17	A15	A15	
18	A14	A14	
19	A12	A12	
20	A13	A13	
21	A7	A7	
22	A8	A8	
23	A6	A6	
24	A9	A9	
25	A5	A5	
26	A11	A11	

PIN NO.	ITEM	FUNCTION	OUT VOLT
27	A4	A4	
28	D10	D10	
29	D7	D7	
30	D6	D6	
31	D0	D0	
32	D5	D5	
33	D1	D1	
34	D4	D4	
35	D2	D2	
36	D3	D3	
37	A0	A0	
38	A1	A1	
39	A2	A2	
40	VSS	VSS	
41	VDD	VDD	
42	A17	A17	
43	A18	A18	
44	SCL1	SCL1	
45	SDA1	SDA1	
46	SDA2	SDA2	
47	SCL2	SCL2	
48	WP	WP	
49	AMP-MUTE	AMP-MUTE	
50	CENTER-MUTE	CENTER-MUTE	
51	BUS-STOP	BUS-STOP	
52	KEY1	KEY1	

PIN NO.	ITEM	FUNCTION	OUT VOLT
53	KEY2	KEY2	
54	MAIN-AFT	MAIN-AFT	
55	SUB-AFT	SUB-AFT	
56	VSS	VSS	
57	A3	A3	
58	VDD	VDD	
59	M3L CLK	M3L CLK	
60	M3L DAT	M3L DATA	
61	M3L ENABLE	M3L ENABLE	
62	NC	NC	
63	RXD	RXD	
64	IR	IR	

4-10-3 Pin Layout(CS)



4-10-4 MICOM Pins(CS)

PIN NO.	ITEM	FUNCTION	OUT VOLT
1	W.P		
2	SDA2		
3	SCL2-		
4	BUS-STOP	I^2 BUS STOP	
5	SDA-1	DATA BUS LINE	
6	SCL-1	CLOCK BUS LINE	
7	S-RESET	SOUND RESET	
8	V-MUTE	VIDEO SIGNAL MUTE	
9	VDD	VDD 2.5V	
10	GND	GND	
11	VCC	VCC 3.3V	
12	CVBS	CVBS IN	
13	VDD	VDD 2.5V	
14	GND	GND	
15	MAIN-AFT	MAIN TUNER AFT	
16	SUB-AFT	SUB AUTO FINE TURNING CONTROL	
17	KEY2	KEY SCAN 2	
18	KEY1	KEY SCAN 1	
19	HSYNC	HORIZONTAL SYNC INPUT	
20	VSYNC	VERTICAL SYNC INPUT	
21	KEY3	KEY SCAN 3	
22	PROTECT	PROTECT PORT	
23	S-CONTO	SOUND MODE SELECT	
24	IR IN	REMOCON INPUT	
25	D3	CONVERGENCE D3	
26	TIMER-LED	TIMER LED	

PIN NO.	ITEM	FUNCTION	OUT VOLT
27	ST-BY-LEDD	LED	
28	RXD	-	
29	GND	GND	
30	VDD	VDD 3.3V	
31	D2	DATA BUS LINE	
32	D1	CLOCK BUS LINE	
33	/RESET	RESET	
34	XTAL1	XTAL1	
35	XTAL2	XTAL2	
36	GND	GND	
37	VDD	VDD 2.5V	
38	OSD R	ON SCREEN DISPLAY RED OUTPUT	
39	OSD G	ON SCREEN DISPLAY GREEN OUTPUT	
40	OSD B	ON SCREEN DISPLAY BLUE OUTPUT	
41	OSD F-B	OSD BLAKING SIGNAL OUTPUT	
42	VDD	VDD 2.5V	
43	GND	GND	
44	VDD	VDD 3.3V	
45	DVD-IDENT	DVD-IDENT	
46	DTV-INENT	DTV-IDENT	
47	CENTER	SPK MUTE	
48	MODE SELECT	DVD MODE SELECT(480i/480p)	
49	AMP-MUTE	MAIN AMP MUTE	
50	POWER	POWERR ON/OFF RELAY CONTROL	
51			
52	S-CONTO	SOUND MODE SELECT	

4-10-5 Proscan Module (CS)

PIN NO.	ITEM	FUNCTION	OUT VOLT
1	Pr/R	Pr/R INPUT	2.0V
2	Y/G	Y/G INPUT	2.0V
3	Pb/B	Pb/B INPUT	2.0V
4	FB	FAST BLANKING INPUT	0.25V
5	GND	GND	-
6	HC	5V INPUT	-
7	VS1	VS1 INPUT	-
8	GND	GND	-
9	SDA	SERIAL DATA LINE	4.7V
10	SCL	SERIAL CLOCK LINE	4.8V
11	5V	5V	5V
12	27M	OPTION	-
13	GND	GND	GND
14	5V-	5V-	5V-
15	H-OUT	HORIZENTAL-OUT	N.C
16	V-OUT	VERTICAL-OUT	N.C
17	SCP		-
18	EW	EAST WEST OUT	2.2V
19	V-BLK	V-BLANKING	-
20	ABL	ABL INPUT	2.15V
21	AD-	VERTICAL DRIVE(-VOLTAGE)	2.95V
22	AD+	VERTICAL DRIVE(+VOLTAGE)	2.90V
23	H-BLK	H-BLANKING INPUT	-
24	HD	H-DRIVE OUT	1.6V
25	GND	GND	GND
26	PIP-RF		-
27	PIP-C		-
28	PIP-V/Y		-
29	GND	GND	GND
30	CVBS-Y		-

PIN NO.	ITEM	FUNCTION	OUT VOLT
31	CHR	CHROMA	-
32	GND	GND	GND
33	PC-R	N.C	-
34	PC-G	N.C	-
35	PC-B	N.C	-
36	PC-H	GND	GND
37	PC-V	OSD-R INPUT	-
38	GND	OSD-G INPUT	-
39	OSD-R	OSD-B INPUT	-
40	OSD-G	BLANK(MICOM OUT)	-
41	OSD-B	HALF TONE INPUT	-
42	YS/YM	VIDEO MUTE (V-CHIP ON)	4.72V
43	YS/YM	GND	GND
44	GND	9V	9V
45	9V	D-Pr INPUT	-
46	HD-Pr	D-Y INPUT	-
47	HD-Y	D-Pb INPUT	-
48	HD-Pb	N.C	-
49	GND	GND GND	
50	R-OUT	R-OUT	-
51	G-OUT	G-OUT	-
52	B-OUT	B-OUT	-
53	GND	GND	GND
54	IK	IK OUT	3.65V
55	GND	SPOT OUT	-
56	GND	GND	GND
57	VM-Y	VM-Y OUT	5.42V
58	YD	N.C	-
59	GND	GND	GND
60	CG-SYND	CG-SYNC INPUT	-

PIN NO.	ITEM	FUNCTION	OUT VOLT
61	CG-B	CG-B INPUT	-
62	CG-G	CG-G INPUT	-
63	CG-R	CG-R INPUT	-
64	GND	GND	GND

4-10-6 Sound Module

PIN NO.	ITEM	FUNCTION	OUT VOLT
1	GND	GND	GND
2	GND	GND	GND
3	GND	GND	GND
4	S-RESET	SOUND RESET	-
5	MAIN-L	MAIN LEFT OUT	-
6	GND	GND	GND
7	GND	GND	GND
8	5V	5V	5V
9	MAIN-R	MAIN RIGHT OUT	-
10	GND	GND	GND
11	GND	GND	GND
12	GND	GND	GND
13	8V	8V	8V
14	SCL-1	SERIAL CLOCK LINE	-
15	GND	GND	GND
16	SDA-1	SERIAL DATA LINE	-
17	CENTER	CENTER OUT	-
18	GND	GND	GND
19	GND	GNAD	GND
20	12V	12V	12V
21	SURROUND	SURROUND OUT	-
22	GND	GND	GND
23	GND	GND	GND
24	S-F1	S-F1(ANT1)	-
25	GND	GND	GND
26	GND	GND	GND
27	AV4-L-IN	AV4 LEFT INPUT	-
28	A-MONO-IN	A-MONO INPUT	-
29	GND	GND	GND
30	GND	GND	GND

PIN NO.	ITEM	FUNCTION	OUT VOLT
31	AV4-R-IN	AV4 RIGHT INPUT	-
32	S-F2	S-F2(ANT2)	-
33	GND	GND	GND
34	GND	GND	GND
35	GND	GND	GND
36	GND	GND	GND
37	EXT-L-IN	EXTERNAL LEFT INPUT	-
38	H-PHONE-L	HEADPHONE LEFT OUT	-
39	GND	GND	GND
40	GND	GND	GND
41	EXT-R-IN	EXTERNAL RIGHT INPUT	-
42	H-PHONE-R	HEADPHONE RIGHT OUT	-
43	GND	GND	GND
44	GND	GND	GND
45	GND	GND	GND
46	GND	GND	GND
47	AV2-L-IN	AV2 LEFT INPUT	-
48	MONITOR-L	MONITOR OUT	-
49	GND	GND	GND
50	GND	GND	GND
51	AV2-R-IN	AV2 RIGHT INPUT	-
52	MONITOR-R	MONITOR OUT	-
53	GND	GND	GND
54	GND	GND	GND
55	GND	GND	GND
56	GND	GND	GND
57	AV1-L-IN	AV1 LEFT INPUT	-
58	AV1-L-OUT	AV1 LEFT OUTPUT	-
59	GND	GND	GND
60	GND	GND	GND

PIN NO.	ITEM	FUNCTION	OUT VOLT
61	AV1-R-IN	AV1 RIGHT INPUT	-
62	AV1-R-OUT	AV1 RIGHT OUT	-
63	GND	GND	GND
64	GND	GND	GND

4-10-7 CONV-Module

PIN NO.	ITEM	FUNCTION	OUT VOLT
1	6V	6V	6V
2	GND	GND	GND
3	FOCUS	N.C	-
4	GND	GND	GND
5	D2	SDA	-
6	D1	SCL	-
7	GND	GND	GND
8	C-SYNC	C-SYNC OUT	4.41V
9	R	WHEN TEST PATTERN R OUT	-
10	TEST-Y/G	WHEN TEST PATTERN G OUT	-
11	B	WHEN TEST PATTERN B OUT	-
12	D3	D3/NT-PAL SEL	0.2V
13	CTRL	CTRL	-
14	IR	INPUT REMOCON	3V
15	COMP	COMP VIDEO OUTPUT	-
16	GND	GND	GND
17	GND	GND	GND
18	GND	GND	GND
19	BV	BLUE VERTICAL OUT	-
20	BH	BLUE HORIZONTAL OUT	-
21	GV	GREEN VERTICAL OUT	-
22	GH	GREEN HORIZONTAL OUT	-
23	RV	RED VERTICAL OUT	-
24	RH	RED HORIZONTAL OUT	-
25	GND	GND	GND
26	H-BLK	H-BLANKING OUT	0.52V
27	V-BLK	V-BLANKING OUT	-
28	GND	GND	GND
29	N.C	N.C	-
30	-5.4V	-5.4V	-5.4V

PIN NO.	ITEM	FUNCTION	OUT VOLT
31	5.4V	5.4V	5.4V
32	GND	GND	GND

MENO